LCRES HOLDINGS, INC.
9 S. Forrest Ave., Suite 100
Norristown, PA 19401

October 7, 2014

Via Electronic and Overnight Mail
Ms. Bonnie Hriczko
Removal Action Branch
U.S. Environmental Protection Agency, Region II
2890 Woodbridge Avenue, MS-211
Edison, NJ 08837

Re: LCR Electronics, Inc.'s Response, made by LCRES Holdings, Inc., to Request for Information Pursuant to Section 104(e) of CERCLA for Superior Barrel and Drum Site, Elk, Gloucester County, New Jersey

Dear Ms. Hriczko,

LCRES Holdings., on behalf of LCR Electronics, Inc. ("Respondent"), hereby submits this Response to the Request for Information ("Request") dated August 27, 2014 from the United States Environmental Protection Agency ("EPA") concerning the Superior Barrel and Drum Site ("Site"). Respondent reserves the right to supplement, modify and/or amend this Response if new or additional information is discovered.

The enclosed information is being provided to EPA without admitting or acknowledging that EPA has the authority to require production of the information requested, or that the statutory authority asserted in the Request is applicable. Additionally, nothing in this Response should be construed as an admission of any liability or responsibility on the part of Respondent regarding any costs incurred by EPA or any other party relating to the Site. Respondent reserves all defenses and rights available to it under the law.

Respondent intends to cooperate with respect to the substance of this Request. However, as standard practice, and given the broad scope of the Request, raises objections to the Request, both general and specific.

General Objections

Respondent asserts the following General Objections to the Request, which General Objections are hereby incorporated in each and every response of Respondent to individual questions below. To the extent Respondent responds to questions to which it objects, such objections are not waived by the furnishing or providing of information.

1. Respondent objects to the Request to the extent the Request exceeds the scope of EPA's authority under the statutory references cited in the Request.

2. Respondent objects to the Request as overly broad and unduly burdensome.

3. Respondent objects to the Request to the extent the Request seeks information that is irrelevant and/or has no relation to the Site or relevance to this inquiry, including but not limited to, detailed information and documents regarding products and wastes during irrelevant time periods or where no connection to the Site appears to exist.

3. Respondent objects to the Request to the extent it seeks information protected from disclosure by the attorney-client privilege, the attorney work-product doctrine, the joint defense privilege, and any other legally cognizable privilege.

4. Respondent objects to the Request to the extent that it seeks information in the possession, custody, or control of EPA, or any other local, state, or federal governmental authority. Respondent further objects to the Request to the extent that it seeks information that is a matter of public record.

5. Respondent objects to the Request to the extent that it seeks information outside of Respondent's possession, custody or control.

Response to Request for Information

Introductory Statement

LCR Electronics, Inc. ("LCR") began operations at 9 South Forrest Avenue in Norristown, Pennsylvania in approximately 1990. LCR was a small manufacturer of electronic filters and components. LCR had one, and only one, transaction with Superior Barrel and Drum ("SBD"): the shipment of 25 RCRA empty drums on or about March 16, 1998.

At the time of this shipment, LCR only used four potential raw materials that came in drums: a 2 part resin (consisting of separately drummed parts A and B), isopropyl alcohol and methyl, ethyl ketone. The MSDS for these four products are attached. The MSDS confirm that isopropyl alcohol and the POLYL resin contained no hazardous substances. (See attached MSDS).

The shipping documents do not identify the contents of the particular RCRA empty drums sent from LCR to Superior (i.e., whether they contained resin part A or B, alcohol or MEK). The witnesses interviewed likewise could not make any such identification. Consequently, there is no evidence that the RCRA empty drums sent by LCR to Superior contained even traces of CERCLA hazardous substances, a prerequisite for liability under Section 107(a)(3) of CERCLA. Without such documentation, there is no basis to establish LCR's liability under CERCLA at the Superior Site.

Alternatively, and without waiver of LCR's position that it is not a liable party under CERCLA, LCR's potential liability is de micromis. LCR's only nexus to the Site is a one-time shipment of 25 RCRA empty drums of undetermined contents.

In 2013, LCR's parent company, LCRES Holdings, Inc. ("LCRES Holdings") sold the stock of LCR to Astrodyne Corporation ("Astrodyne"). LCR is now a wholly owned subsidiary of Astrodyne. However, since the only potential nexus between LCR and SBD occurred prior to the sale of LCR's stock to Astrodyne, LCRES Holdings has provided these responses to EPA's Request.

General Information about the Company

1. **Company Information**

   a. **State the correct legal name of the Company.**

   LCR Electronics, Inc.

   b. **Identify the legal status of the Company (corporation, partnership, specify if other) and the state in which the Company was organized.**

   LCR is a Pennsylvania Corporation

   c. **State the name(s) and address(es) of the President, Chairman of the Board and the Chief Executive Officer of the Company.**

   See answer to 1.e. below

   d. **Provide the name of an attorney, if any, who will serve as the legal contact for your Company in this matter.**

   Barbara Ilsen
   Dilworth Paxson LLP
   1500 Market Street - Suite 3500E
   Philadelphia, PA 19102

   e. **If your Company is a subsidiary or affiliate of another corporation, or has subsidiaries itself, identify each such entity and its relationship to your Company.**

   Astrodyne is the current parent of LCR. Peter Kaczmarek is the President and CEO of Astrodyne.

   f. **Identify the state and date of incorporation and the agent for service of process in the State of incorporation and in the State of New Jersey for your Company and for each entity identified in your response to Question 1(e) above.**

   LCR is a Pennsylvania corporation with a registered address of 9 South Forrest Avenue, Norristown, PA 19401. There is no registered agent for LCR in Pennsylvania or New Jersey. Astrodyne is a Delaware Corporation.

g. **If the Company is a successor to, or has been succeeded by another entity, identify each such other entity and provide the same information requested above for each.**

N/A

h. **If the Company transacted business with SBD in the name of an entity not already disclosed above, give the name of such entity and state its relationship to the Company.**

N/A

2. **State whether any of your Company's facilities has ever conducted any business transactions <u>of any nature</u> with Superior Barrel and Drum Company ("SBD"), including but not limited to the sale, purchase, removal, disposal, treatment or storage of any barrels, drums, totes, overpacks or other containers (hereinafter collectively referred to as "Containers").**

Yes

3. **If your answer to Question 2, above, is yes, identify <u>each company facility</u> involved in all such transactions and provide the following information for each facility:**

a. **State the name and address of each facility and describe each facility's operations;**

LCR's facility is located at 9 South Forrest Avenue, Norristown, PA 19401. LCR was a small manufacturer of electronic filters and components.

b. **For each facility, describe the nature of business relationship between that facility and SBD, including the nature of services rendered or products sold;**

On or about March 16, 1998, Superior Barrel picked up 25 RCRA empty drums, residual contents unknowns,

c. **Provide copies of any contracts, agreements or other arrangements between that facility and SBD;**

The shipping document is attached.

d. **Provide copies of all permits issued pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 *et seq.* ("RCRA") for each facility; and**

N/A

e. **Identify the EPA RCRA identification number, if any, for each facility.**

PAR000041392

4. **If your answer to Question 2, above, is yes, did any of the transactions between any Company facility and SBD involve the transport or shipment of any Containers from that facility to SBD by any person, regardless of whether such Containers contained no material whatsoever, contained more or less than one inch of material, or may have been described as RCRA "empty"? Answer: __X__ Yes; _____ No.**

5. **If your answer to Question 4, above, is yes, for <u>each such transaction</u> provide the following information:**

   a. **Identify the specific dates of each transaction, the Company facility involved with each transaction, the intended purpose of each transaction, and the number and type of Containers involved in each transaction;**

      See answer to 3.b. above

   b. **Provide copies of all documents relating in any way to each transaction, including but not limited to copies of delivery receipts, invoices, bills of lading, purchase orders or payment devices; and**

      The shipping document is attached.

   c. **Identify all persons who might have knowledge of the transaction or who had the responsibility regarding the transaction.**

      Jeff Conner, LCR Sheet Metal Shop Manager

      Bill Dude, LCRES Holdings' Facilities Manager

6. **For each Company facility identified in response to Question 5, above, for the time period from 1974 to 2013;**

   The answer to this question is limited to the period from 1990 when operations commenced at the LCR facility and 1998, when the one shipment of RCRA empty drums of unknown contents to SBD occurred.

   a. **Describe the facility's operations;**

      Small manufacturer of electronic filters and components.

   b. **Identify all chemicals used as raw materials in that facility's operations;**

      See answer to question c. below.

   c. **Identify all chemicals contained in products produced at that facility;**

      The facility only uses a two part polyurethane resin, manufactured by Epic Resins. The resins came in separate 55 gallon drums for part A and B. The resins were used as an encapsulant, i.e., to hold the components in place. The MSDS for each separate part of the resins is attached.

   d. **Identify all chemicals used to clean equipment or machinery at that facility;**

Isopropyl alcohol, and methyl ethyl ketone ("MEK") MSDS for these cleaning products are attached. These products also came in 55 gallon drums.

e. **Identify the nature and chemical constituents of all waste streams at that facility and their disposition;**

During the relevant time period, LCR used Greenleaf Environmental Services, Inc. to dispose of MEK waste (including the waste flux) and small amounts of paint waste. Paint did not come in 55 gallon drums and was used to paint metal EMI Filter housings.

f. **Identify any other chemicals used at that facility and describe their use; and**

None during the relevant time period.

g. **Provide all Material Safety Data Sheets ("MSDS) for all chemicals listed in answer to this Question 6.**

The MSDS are attached.

7. **Was any Container identified in response to Question 5, above, previously used to contain any material? Answer: __X__ Yes; _____ No. If your answer is yes, for each such Container provide the following:**

a. **Identify each material previously contained within such Container, including its specific chemical constituents, physical state, quantity by volume and weight, and hazardous and other characteristics;**

The two part resins, MEK and isopropyl alcohol came in similar size and type containers. However, there is no documentary or testimonial evidence as to what the particular drums shipped to SBD formerly contained or whether the residual material in those RCRA empty drums contained hazardous substances.

b. **Provide all written analyses or other documents prepared for or relating to each such material which may be in the custody or control of the Company; and**

None.

c. **Provide all material safety data sheets (MSDS) relating to each such material.**

The MSDS are attached.

8. **Did any Container that was the subject of any transaction identified in response to Question 5 above – contain <u>any material whatsoever</u>, in any quantity, at the time of its transport or shipment from the Company facility, regardless of whether or not it is or was ever alleged to be "empty" under RCRA, or alleged to contain less than one each of material? __X__ Yes; _____ No.**

9. **If your answer to Question 8 is yes, for each Container that contained any material whatsoever, in any quantity, at the time of its transport or shipment from the Company facility:**

a. **Identify each such material, including its specific chemical constituent(s), physical state, quantity by volume and weight, and hazardous and other characteristics;**

See the Introductory Statement and the answer to question 7.a.

b. **Provide all written analyses or other documents prepared for or relating to each such material which may be in the custody or control of the Company; and**

None.

c. **Provide all material safety data sheets (MSDS) relating to each such material.**

The MSDS are attached.

10. **Do you contend that any Container that was the subject of any transaction identified in response to Question 5, above, did NOT contain any material whatever, in any quantity, at the time of its transport or shipment from the Company facility? Answer _____Yes; __X__ No.**

11. **If your answer to Question 10 is yes, for each such Container provide all facts upon which you rely for your assertion.**

N/A

12. **For those transactions identified in response to Question 5, was any treatment or cleaning of any Container performed by any person prior to the time that the Container was transported or shipped from the Company to SBD, including any process or procedure by which the Container was emptied, drained, wiped or otherwise cleaned? Answer _____Yes; __X__ No.**

13. **If your answer to Question 12, above, is yes, for each such Container provide a detailed description of all such treatment, including any emptying, draining, wiping or cleaning, and identify all chemicals used in such treatment or cleaning.**

N/A

14. **For each transaction identified in response to Question 5 involving any third-party transporter, identify each such transporter, including the name and address of such transporter, and identify in which of the transactions such transporter acted.**

SBD

15. **Identify each person consulted in responding to these questions and all questions on which he or she was consulted.**

Jeff Conner, Sheet Metal Shop Manager
Bill Dude – Facilities Manager. Conner and Dude were questioned on the shipment to SBD.

16. **Identify any other person or entity (*e.g.*, individual, company, partnership, etc.) having knowledge of facts relating to the questions which are the subject of this inquiry. For each such person that you identify, provide the name, address, and telephone number of that person, and the basis of your belief that he or she has such knowledge. For past and present employees, include their job title(s) and a description of the responsibilities.**

See answer to question 16.

Nissen Isakov and Shmuel Yankelewitz, former President and Vice President of LCR
9 South Forrest Ave. Suite 100, Norristown PA 19401
Work Phone: 484-636-3202

17. **Supply any additional information or documents that may be relevant or useful to identify other sources who disposed of or transported Containers to the Site.**

No additional information.

Respectfully yours,

LCRES HOLDINGS, INC.

By: _____
Nissen Isakov, President

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

LCR ELECTRONICS, INC.

Commonwealth of Pennsylvania

County of Montgomery

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. I am also aware that I am under a continuing obligation to supplement my response to EPA's Request for Information if any additional information relevant to the matters addressed in EPA's Request for Information or my response thereto should become known or available to me.

LCRES HOLDINGS, INC.

By: _____

Nissen Isakov, President

Sworn to before me this 7th day of October, 2014

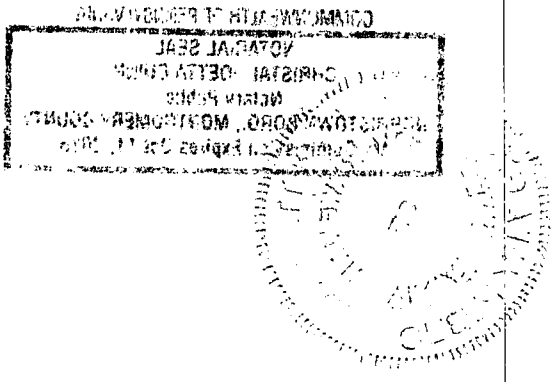
_____

Notary Public

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
CHRISTAL JOETTA QUINN
Notary Public
NORRISTOWN BORO., MONTGOMERY COUNTY
My Commission Expires Oct 11, 2016

1340362_1.docx

117628333_1



SUPERIOR BARREL AND DRUM CO. INC.
P.O. BOX 741 • GLASSBORO, NJ 08028 • (609) 881-5866

NAME LCR - Electronics

ADDRESS

CITY Norristown STATE PA ZIP

DATE 3/16/98 CUSTOMER PO

QUANTITY	DESCRIPTION	PRICE	AMOUNT	
25	Mtg Open Head Drums	—	—	—

REC'D

EMPTY DRUM CERTIFICATION

I hereby certify that these drums are "empty" as that term is defined in the National Environmental Protection Agency regulations, 40 CFR 261.7*, and that they have been properly prepared for transportation under the regulations of the U.S. Department of Transportation, 49 CFR 173.29.**

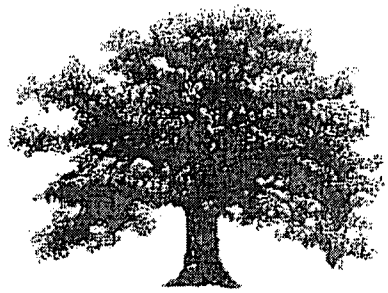
Print Name

Signature

*With regard to most regulated residues, EPA's 40 CFR 261.7 says:
"A container. . .is empty if:
(I) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating.
and
(II) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container. . ."
EPA has explained this rule, saying that "one inch of waste material is an overriding constraint and may remain in an empty container only if it cannot be removed by normal means. The rationale for this provision is that there are certain tars and other extremely viscous materials that will remain in the container even after the container is emptied by normal means."
For residues of products specifically listed by name in 40 CFR 261.33(e), EPA says the container is empty only "if the container. . .has been triple-rinsed using a solvent capable of removing" the product, or has been cleaned by another method shown to achieve equivalent removal.

**DOT's 49 CFR 173.29 says that all openings on the empty container must be closed, and that all markings and labels must be in place as if the drum were full of its original contents. A DOT shipping paper is not required for transportation of a drum for reconditioning via contract or private motor carrier. DOT placarding is not required for vehicles carrying empty containers.

Greenleaf Environmental Services, Inc.
CHEMICAL WASTE RECYCLING & TREATMENT
7360 Milnor Street, Philadelphia, PA 19136-4211
(215) 333-2999 • (215) 333-2218
Internet EMail: sbrainard@chemical.net



LCR Electronics, Inc. Hazardous Waste Shipments Summary
Arranged by Greenleaf Environmental Services, Inc.

December 22, 1999 Shipment

TSDF: Omni North East Chemical – Cleveland, OH; EPA ID No. OHD980581571
Transporter: S-J Transportation – Woodstown, NJ; EPA ID No. NJD071629976

Amount	Weight	Description
14 drums 520 gal	4,160#	Potting compound w/MEK D035
2 drums 110 gal	770#	Waste Paint, D035, D001 (cans in drums)
3 drums 165 gal	1,155#	Waste Paint, D035, D001
2 drums 110 gal	770#	Waste Flux D001, D035, F003
	6,855#	

AllChem Industries

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT

MSDS Name: Methyl Ethyl Ketone
Synonyms: Acetone, methyl-; Butanone; 2-Butanone; Butanone 2; 3-Butanone; Ketone, ethyl methyl; MEK; Methyl acetone

For CHEMTREC assistance, call: 800-424-9300

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS# :	78-93-3
Chemical Name:	Methyl Ethyl Ketone
EINECS# :	201-159-0
Hazard Symbols	Xi F
Risk Phrases:	11 36 66 67

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: -7°C. Danger! Extremely flammable liquid. May cause respiratory tract irritation. May cause central nervous system effects. May cause severe eye and skin irritation with possible burns. May cause digestive tract irritation with nausea, vomiting, and diarrhea. May cause fetal effects. Target Organs: Central nervous system.

POTENTIAL HEALTH EFFECTS

Eye:

Causes eye irritation. May result in corneal injury.

Skin:

May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause irritation and/or dermatitis.

Ingestion:

May cause irritation of the digestive tract. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation:

Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause numbness in the extremities.

Chronic:

Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis. Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen.

SECTION 4 - FIRST AID MEASURES

Eyes

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

Skin:

Get medical aid. Rinse area with large amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.

Ingestion:

Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Treat symptomatically and supportively

SECTION 5 - FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May polymerize explosively when involved in a fire. Containers may explode when heated.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation.

SECTION 7 - HANDLING and STORAGE

Handling:

Use only in a well ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and

flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames

Storage:

Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name:	Methyl Ethyl Ketone
ACGIH:	200 ppm; 300 ppm STEL
NIOSH:	200 ppm TWA; 590 mg/m3 TWA 3000 ppm IDLH
OSHA - Final PELs:	200 ppm TWA; 590 mg/m3 TWA
OSHA Vacated PELs:	
Methyl Ethyl Ketone:	200 ppm TWA; 590 mg/m3 TWA

PERSONAL PROTECTIVE EQUIPMENT

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1910 134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Colorless liquid
Odor:	Sweetish odor - alcohol-like
pH:	Not available
Vapor Pressure:	71.2 mm Hg
Vapor Density:	2.5 (Air=1)
Evaporation Rate:	2.7 (Ether=1)
Viscosity:	0.42 mPas 15 de
Boiling Point:	80 deg C @ 760 00mm Hg
Freezing/Melting Point:	-87°C
Autoignition Temperature:	404°C (759.20°F)
Flash Point:	-7°C (19.40°F)
NFPA Rating:	(est.) Health: 1; Flammability: 3; Reactivity: 0
Explosion Limits, Lower:	1.80 vol %
Upper:	11.50 vol %
Decomposition Temperature:	
Solubility:	Miscible with oils
Specific Gravity/Density:	.8050g/cm3

Molecular Formula	C4H8O
Molecular Weight:	72.11

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid:
Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials:
Amines, ammonia, caustics, chloroform + alkali, chlorosulfonic acid, copper, hydrogen peroxide + nitric acid, inorganic acids, isocyanates, potassium-t-butoxide, 2-propanol, pyridines, strong oxidizers, and fuming sulfuric acid.
Hazardous Decomposition Products:
Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization:
Has not been reported.

SECTION 11 - TOXICOLOGICAL INFORMATION

RTECS#:
CAS# 78-93-3: EL6475000
LD50/LC50:
CAS# 78-93-3: Inhalation, mouse: LC50 =40 gm/m3/2H; Inhalation, rat: LC50 =23500 mg/m3/8H; Oral, mouse: LD50 = 4050 mg/kg; Oral, rat: LD50 = 2737 mg/kg; Skin, rabbit: LD50 = 6480 mg/kg.
Carcinogenicity:
Methyl Ethyl Ketone -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available
Teratogenicity:
Embryo or Fetus: fetotoxicity, ihl-rat TCLo=1000 ppm. Specific Developmental Abnormalities: craniofacial and urogenital, ihl-rat TCLo=3000 ppm/7H; musculoskeletal, ihl-rat TCLo=1000 ppm.
Reproductive Effects:
No information available
Neurotoxicity:
No information available
Mutagenicity:
Sex chromosome loss/non-disjunction; S. cerevisiae 33800 ppm.
Other Studies:
See actual entry in RTECS for complete information.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:
Fish: Fathead Minnow: LC50 = 3220 mg/L; 96 Hr; UnspecifiedFish: Bluegill/Sunfish: LC50 = 1690 mg/L; 96 Hr; UnspecifiedBacteria: Phytobacterium phosphoreum: EC50 = 51.9 mg/L; 25 min; Microtox testBacteria: Phytobacterium phosphoreum: EC50 =3373 mg/L; 30 min; Microtox test Fathead minnow LC50=3220 mg/L/96H Bluegill TLm=5640 to 1690 mg/L/24 to 96H

AllChem Industries

SECTION 13 - DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR. Additionally, waste generators must consult state and local hazardous waste regulation to ensure complete and accurate classification.

RCRA P-Series: None listed
RCRA U-Series: CAS# 78-93-3: waste number U159;(Ignitable waste, Toxic waste).

SECTION 14 - TRANSPORT INFORMATION

Regulated Material. Please refer to applicable shipping regulations.

SECTION 15 - REGULATORY INFORMATION

US FEDERAL

TSCA
CAS# 78-93-3 is listed on the TSCA inventory.
Health & Safety Reporting List
CAS# 78-93-3: Effective Date: October 4, 1982; Sunset Date: October 4, 1992
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
Section 302 (RQ)
CAS# 78-93-3: final RQ = 5000 pounds (2270 kg)
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 78-93-3: acute, flammable.
Section 313
This material contains Methyl Ethyl Ketone (CAS# 78-93-3, 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Methyl Ethyl Ketone can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
California No Significant Risk Level:
None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols: Xi F

Risk Phrases:

R 11 Highly flammable.
R 36 Irritating to eyes.
R 66 Repeated exposure may cause skin dryness or cracking.
R 67 Vapors may cause drowsiness and dizziness.

Safety Phrases:

S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.

WGK (Water Danger/Protection)

CAS# 78-93-3: 1

United Kingdom Occupational Exposure Limits

CAS# 78-93-3: OES-United Kingdom, TWA 200 ppm TWA; 600 mg/m3 TWACAS# 78-93-3: OES-United Kingdom, STEL 300 ppm STEL; 899 mg/m3 STEL

Canada

CAS# 78-93-3 is listed on Canada's DSL/NDSL List.
This product has a WHMIS classification of B2, D2A.
CAS# 78-93-3 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 78-93-3: OEL-AUSTRALIA:TWA 150 ppm (445 mg/m3);STEL 300 ppm (890 mg/m3)
OEL-AUSTRIA:TWA 200 ppm (590 mg/m3)
OEL-BELGIUM:TWA 200 ppm (590 mg/m3);STEL 300 ppm (885 mg/m3)
OEL-DENMARK:TWA 100 ppm (290 mg/m3);Skin
OEL-FINLAND:TWA 150 ppm (440 mg/m3);STEL 190 ppm;Skin
OEL-FRANCE:TWA 200 ppm (600 mg/m3);Skin
OEL-GERMANY:TWA 200 ppm (590 mg/m3)
OEL-HUNGARY:TWA 200 mg/m3;STEL 600 mg/m3
OEL-INDIA:TWA 200 ppm (590 mg/m3);STEL 300 ppm (885 mg/m3)
OEL-JAPAN:TWA 200 ppm (590 mg/m3)
OEL-THE NETHERLANDS:TWA 200 ppm (590 mg/m3)
OEL-THE PHILIPPINES:TWA 200 ppm (590 mg/m3)
OEL-POLAND:TWA 200 mg/m3
OEL-RUSSIA:TWA 200 ppm;STEL 200 mg/m3
OEL-SWEDEN:TWA 50 ppm (150 mg/m3);STEL 100 ppm (300 mg/m3)
OEL-SWITZERLAND:TWA 200 ppm (590 mg/m3);STEL 400 ppm
OEL-TURKEY:TWA 200 ppm (590 mg/m3)
OEL-UNITED KINGDOM:TWA 200 ppm (590 mg/m3);STEL 300 ppm
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

SECTION 16 - ADDITIONAL INFORMATION

ALWAYS COMPLY WITH ALL APPLICABLE INTERNATIONAL, FEDERAL, STATE AND LOCAL REGULATIONS REGARDING THE TRANSPORTATION, STORAGE, USE AND DISPOSAL OF THIS CHEMICAL.

Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING**

ITS CORRECTNESS. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

MSDS Creation Date: 6/14/01 Revision #2 Date: 24-September-2007

AllChem Industries Industrial Chemicals Group, Inc.
6010 NW First Place • Gainesville, FL 32607
TEL: (352) 378-9696 FAX: (352) 333-7438

AllChem Industries

Safety Data Sheet

Section 1: Identification

Product Name: **Isopropanol**

Synonyms: Isopropyl Alcohol, 2-Propanol, 2-Propyl Alcohol, n-Propan-2-ol, IPA, Sec-Propanol, Sec-Propyl Alcohol

CAS No.: 67-63-0

Chemical Formula: C_3H_8O

Company: AllChem Industries ICG, Inc.
6010 NW First Place
Gainesville, FL 32607
Tel: (352) 378-9696

Emergency Number: CHEMTREC: 800-424-9300

Section 2: Hazard(s) Identification

Emergency Overview: Flammable liquid.
Hygroscopic. This substance has caused adverse reproductive and fetal effects in animals.
May form explosive peroxides.
May cause severe eye irritation and possible injury.
Causes digestive and respiratory tract irritation.
Causes mild skin irritation, possible sensitizer.
Target Organs: Kidneys, central nervous system, gastrointestinal system, cardiovascular system.

GHS Classification:

	Category
Flammable liquids	2
Skin irritation	3
Eye irritation	2A
Specific target organ toxicity-single exposure	3

GHS Label elements:

Pictograms:

Signal Word: **Danger**

Hazard Statements:

Code	Discription
H225	Highly flammable liquid and vapour.
H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary Statements:	Code	Discription
	P210	Keep away from heat/spark/open flames/ hot surfaces - No smoking
	P261	Avoid breathing dust/fum/gas/mist/vapours/spray.
	P305, P351, P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other classifications:

NFPA Rating:		HMIS:	
Health:	2	Health:	2
Fire:	3	Flammability:	3
Reactivity:	0	Physical:	0

Section 3: Composition, Information on Ingredients

Component	CAS No	Index No.	Concentration	EINECS No
2-Propanol	67-63-0	603-117-00-0	100%	200-661-7

Section 4: First-aid measures

Inhalation:
Remove to fresh air.
If not breathing, apply artificial respiration.
If breathing is difficult, give oxygen provided a qualified individual is present.
Get medical assistance.

Ingestion:
Do NOT induce vomiting.
If victim is conscious and alert, give 2-4 cupfulls of milk or water.
Never give anything by mouth to an unconscious person.
Get medical aid.

Skin Contact:
Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.
Wash clothing before reuse or discard if they cannot be thoroughly cleaned.
Get medical aid.

Eye Contact:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Get medical aid.

NOTE TO PHYSICIAN:
Treat symptomatically and supportively.
Urine acetone test may be helpful in diagnosis.
Hemodialysis should be considered in severe intoxication.
Treat symptomatically and supportively.

Section 5: Fire-fighting measures

Condtions of flammability: Flammable Liquid. Will burn if involved in a fire.

Extinquishing Media: Water may be ineffective.
Material is lighter than water and a fire may be spread by the use of water.
Do NOT use straight streams of water.
For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.
For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam.
Cool containers with flooding quantities of water until well after fire is out.

Special protective equip.: Wear a self-contained breathing apparatus MSHA/NIOSH (approved or equivalent), and full protective gear.

Hazardous combustion products:

Special Information: Containers may explode in the heat of a fire.
May form explosive peroxides.
Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.
Vapors can travel to a source of ignition and flash back.
Vapors may form an explosive mixture with air.

Section 6: Accidental release measures

Personal precautions: Wear personal protection equipment.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods of containment/cleanup: Clean up spills immediately.
Absorb spill with inert material, then place into a chemical waste container.
Remove all sources of ignition.
Use a spark-proof tool.
Provide ventilation.
A vapor suppressing foam may be used to reduce vapors.

Section 7: Handling and storage

Handling: Wash thoroughly after handling.
Remove contaminated clothing and wash before reuse.
Ground and bond containers when transferring material.
Use spark-proof tools and explosion proof equipment.
Loosen closure cautiously before opening. Contents may develop pressure upon prolonged storage.
Avoid contact with eyes, skin, and clothing.
Empty containers retain product residue, (liquid and/or vapor), and can be dangerous.
Take precautionary measures against static discharges.
Keep container tightly closed.
Do not ingest or inhale. Do not breathe dust, vapor, mist, or gas.
Use only in a chemical fume hood.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Flammables-area.
Keep away from sources of ignition, heat, sparks, and flame.
Do not store in direct sunlight.
Keep container tightly closed and store in a cool, dry, well-ventilated area.
After opening, purge container with nitrogen before re-closing.
Periodically test for peroxide formation on long-term storage.
Addition of water or appropriate reducing materials will lessen peroxide formation.

Incompatibilities:			
Aldehydes	Acetaldehyde	Acid anhydrides	Acids
Amines	Alkalies	Aluminum	Aluminum isopropoxide
Chromium trioxide	Barium perchlorate	Carbony dichloride	Chlorine
Halogenated organics	Crotonaldehyde	Ethylene oxide	Dioxygenyl tetrafluoroborate
Hypochlorous acid	Halogens	Hydrogen peroxides	Hexamethylene diisocyanate
Oleum	Iron salts	Isocyanates	Ketones
Permanganates	Oxidizing materials	Oxygen	Perchloric acid
Urea formaldehyde	Potassium-tert-butoxide	Sulfuric acid	Trinitiromethane
	Attacks some forms of plastics, rubbers, and coatings.		

Section 8: Exposure controls/ personal protection

Exposure Limits:	**Regulator:**	**Test:**	**Allowance:**		
	ACGIH	TWA	400ppm	983 mg/m^3	
	ACGIH	STEL	500ppm	1230 mg/m^3	
	NIOSH	REL	400 ppm	980 mg/m^3	(10 hours)
	NIOSH	STEL	500ppm	1225 mg/m^3	
	IDLH		12,000 ppm		
	OSHA	PEL	400 ppm	980 mg/m^3	

Engineering Controls: Use explosion-proof ventilation equipment.
Use only under a chemical fume hood.
An emergency eye wash must be readily accessible to the work area.
An emergency shower must be readily accessible to the work area.

Personal Protective Equipment:

Personal Respirators: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Skin Protection: Wear appropriate protective gloves and clothing to prevent skin exposure.

Eye Protection: Wear appropriate protective eyeglasses or chemical safety goggles.

Section 9: Physical and chemical properties

Appearance		
Physical State:	Liquid	
Color:	Colorless	
Odor:	Solvent odor - alcohol-like	
pH:	No data available.	
Specific Temperatures:		
Freezing/Melting Point:	-88°C	-126.4°F
Boiling Point:	82°C	179.6°F
Decomposition temperature:	No data available.	
Flammability Characteristics:		
Flash Point:	12°C	53.60°F
Auto-ignition Temperature:	459°C	858.20°F
Explosivity Characteristics:		
Lower (LFL):	2.5% (V)	
Upper (UFL):	12.1% (V)	
Vapor Pressure:	33 mm Hg @ 20°C	
Density:		
Vapor Density (air=1):	2.1	
Relative Density (water=1):	0.785	
Solubility:	Miscible.	
Complementary Data:		
Molecular Weight:	60.0554 g/mol	
Evaporization Rate:	2.3 (n-butyl acetate=1)	
Optional Data:		
Viscosity:	2.27 mPas @ 20°C	

Section 10: Stability and reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Distillation may lead to the formation of peroxides.
This material may be sensitive to peroxide formation.

Conditions to Avoid: Light, ignition sources, acids, excess heat, exposure to moist air or water, oxidizers.

Incompatibilities:	Acetaldehyde	Acid anhydrides	Acids
Aldehydes	Alkalies	Aluminum	Aluminum isopropoxide
Amines	Barium perchlorate	Carbony dichloride	Chlorine
Chromium trioxide	Crotonaldehyde	Ethylene oxide	Dioxygenyl tetrafluoroborate
Halogenated organics	Halogens	Hydrogen peroxides	Hexamethylene diisocyanate
Hypochlorous acid	Iron salts	Isocyanates	Ketones
Oleum	Oxidizing materials	Oxygen	Perchloric acid
Permanganates	Potassium-tert-butoxide	Sulfuric acid	Trinitiromethane
Urea formaldehyde	Attacks some forms of plastics, rubbers, and coatings.		

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Section 11: Toxicological information

Potential health effects:

Inhalation:
- Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma.
- May cause narcotic effects in high concentration.
- Vapors may cause dizziness or suffocation.
- Causes upper respiratory tract irritation.

Skin Contact:
- May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
- May be absorbed through the skin.
- May cause irritation with pain and stinging especially if the skin is abraded.

Eye Contact:
- Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.

Ingestion:
- Causes gastrointestinal irritation with nausea, vomiting and diarrhea.
- May cause kidney damage.
- May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea.
- Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Chronic Effects:
- Prolonged or repeated skin contact may cause defatting and dermatitis.
- May cause reproductive and fetal effects.
- Laboratory experiments have resulted in mutagenic effects.
- May cause allergic skin reaction in some individuals.

Numerical measures of Toxicity -

Acute Toxicity:	Test	Subject	Lethal dose (50% of subjects)
Oral	LD 50	Mouse	3,600 mg/kg
Oral	LD 50	Rabbit	6,410 mg/kg
Oral	LD 50	Rat	5,045 mg/kg
Skin	LD 50	Rabbit	12,800 mg/kg

Carcinogenicity: IARC: Group 3 carcinogen

Additional Information: RTECS#: NT8050000

Epidemiology: Experimental teratogenic and reproductive effects have been reported for isopropanol. Early epidemiological studies have suggested an association between the strong acid manufacture of isopropyl alcohol and paranasal sinus cancer in workers.

Reproductive toxicity:	**Test**	**Subject**	**Lethal dose (50% of subjects)**	
Oral	TD Lo	Rat	11,340 mg/kg	(female 45 days pre-mating)
Maternal Effects - menstrual cycle changes or disorders				
Oral	TD Lo	Rat	5,040 mg/kg	(female 1-20 days after conception)
Fertility - litter size (e.g. # fetuses per litter; measured before birth).				
Teratogenicity:				
Oral	TD Lo	Rat	8 gm/kg	(female 6-15 days after conception)
Effects on Embryo or Fetus - fetotoxicity.				
Oral	TD Lo	Rat	32,400 ug/kg	(female 26 weeks pre-mating)
Effects on Embryo or Fetus - fetal death				
Inhalation	TC Lo	Rat	7,000ppm (7hours)	(female 1-19 days after conception)
Specific Developmental Abnormalities - musculoskeletal system.				

Mutagenicity:

Cytogenetic analysis: Inhalation Rat 1030 ug/m3/16W (Intermittent)

Section 12: Ecological information

Ecotoxicity:	**Test**	**Subject**	**Lethal dose (50% of subjects)**	
	Modified ASTM D 1345 bioassay	Goldfish	> 5,000 mg/L	(24 hours)
	Static bioassay	Fathead Minnow	11,830 mg/L	(1 hours)
	LC50	Fathead Minnow	94,900-10,400 mg/L	(96 hours)
	LC50	Fathead Minnow	61,200-65,500 mg/L	(96 hours)

Persistence and degradability: No data available.

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Other adverse effects: Dangerous to aquatic life in high concentrations.

Section 13: Disposal considerations

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Disposal: Dispose of according to Federal, State, and Local Regulations

Section 14: Transport Information

The information in this section is for reference only and should not take the place of a bill of lading specific to an order.

UN number:	UN 1219
UN proper shipping name:	Isopropanol
Transport hazard class:	3
Packing group number:	II
Labels & Placards:	Flammable
Marine Pollutant:	No

Section 15: Regulatory Information

US FEDERAL

TSCA:	Isopropanol is listed on the TSCA inventory.
Health & Safety Reporting List	Effective Date: 12/15/86; Sunset Date: 12/15/96
Chemical Test Rules:	CAS# 67-63-0: 40 CFR 799.2325
Section 12b:	None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule:	None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)	None of the chemicals in this material have an RQ.
Section 302 (TPQ)	None of the chemicals in this product have a TPQ.
SARA Codes	Acute, chronic, flammable.
Section 313	This material subject to the reporting requirements of Section 313 of SARA.
Clean Air Act:	This material does not contain any hazardous air pollutants.
	This material does not contain any Class 1 Ozone depletors.
	This material does not contain any Class 2 Ozone depletors.
Clean Water Act:	None of the chemicals in this product are listed as Hazardous Substances under the CWA.
	None of the chemicals in this product are listed as Priority Pollutants under the CWA.
	None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA

STATE 2-Propanol can be found on the following state right to know lists: **California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.**

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Xi F

Risk Phrases:
R 11 Highly flammable.
R 36 Irritating to eyes.
R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:
S 7 Keep container tightly closed.
S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection) 1

Canada
CAS# 67-63-0 is listed on Canada's DSL/NDSL List.
This product has a WHMIS classification of B2, D2A, D2B.
CAS# 67-63-0 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: 2/27/2013
Revision date: 5/28/2013

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall AllChem be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if AllChem has been advised of the possibility of such damages.

MATERIAL SAFETY DATA SHEET

PRODUCT CODE: S7253-01[redacted]

HMIS CODES: H F R
1 1 0

SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: EPIC RESINS
ADDRESS : 600 Industrial Drive
Palmyra, WI 53156

EMERGENCY PHONE : (800)-424-9300 EFFECTIVE DATE : 05/12/04
INFORMATION PHONE : (262) 495-3400

SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE MM HG @ TEMP	WEIGHT PERCENT
NONE			

IF THIS PRODUCT CONTAINS PARTICULATES (FILLERS), THEY ARE BLENDED INTO A LIQUID AND POSE NO HAZARD AS SUPPLIED. THEY MAY HOWEVER BE RELEASED IF FINAL PRODUCT IS MACHINED, I.E. SANDED, CUT, ETC. THESE INGREDIENTS ARE LISTED BELOW.

HYDRATED ALUMINA	21645-51-2	NA	NA
ACGIH TLV - 10mg/m3 TWA RESPIRABLE FRACTION 5mg/m3			
OSHA PEL - TOTAL DUST 15mg/m3 TWA RESPIRABLE FRACTION 5mg/m3			
ALUMINA TRIHYDRATE	21645-51-2	NA	NA
NUISANCE DUST			
ACGIH TLV - 10mg/m3 TWA RESPIRABLE FRACTION - 5mg/m3 TWA			
OSHA PEL 15mg/m3 TWA RESPIRABLE FRACTION 5mg/m3 TWA			

INFORMATION CONCERNING ITEMS LISTED AS PROPRIETARY WILL BE DISPENSED TO HEALTH AND SAFETY PROFESSIONALS AS REQUIRED BY 29CFR 1910.1200 (OSHA HAZARD COMMUNICATIONS STANDARD).

TSCA INVENTORY STATUS: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE: NOT DETERMINED.
SPECIFIC GRAVITY (H2O=1): 1.44
VAPOR DENSITY: NOT DETERMINED.
EVAPORATION RATE: NOT DETERMINED.
COATING V.O.C.: 0.0 lb/gl
MATERIAL V.O.C.: 0.0 lb/gl
SOLUBILITY IN WATER: NOT DETERMINED.
APPEARANCE AND ODOR: REFER TO PRODUCT BULLETIN.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A
METHOD USED: N/A

FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY, FOAMS OR WATER FOG.

SPECIAL FIREFIGHTING PROCEDURES
WHEN FIRE FIGHTING, WEAR FULL PROTECTIVE EQUIPMENT INCLUDING SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS
NONE

SECTION V - REACTIVITY DATA

STABILITY:
STABLE
CONDITIONS TO AVOID
HEAT AND FLAME.

INCOMPATIBILITY (MATERIALS TO AVOID)
STRONG OXIDIZERS, STRONG ACIDS.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
CARBON MONOXIDE, CARBON DIOXIDE, POSSIBLY SMALL QUANTITIES OF BUTADIENE.

HAZARDOUS POLYMERIZATION:
[ ] MAY OCCUR [X] WILL NOT OCCUR.

SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
NOT NORMALLY A METHOD OF EXPOSURE, HOWEVER, INHALATION OF VAPORS MAY CAUSE RESPIRATORY IRRITATION, SNEEZING AND COUGHING.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
MATERIAL MAY BE IRRITATING TO EYES AND SKIN. MAY CAUSE RASH OR DERMITITIS.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
SKIN ABSORPTION MAY BE HARMFUL. MAY CAUSE RASH, ITCHING OR DERMITITIS.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
MAY CAUSE IRRITATION OF THE MOUTH, THROAT AND GASTROINTESTINAL TRACT. THIS MAY CAUSE NAUSEA AND DIARRHEA.

HEALTH HAZARDS (ACUTE AND CHRONIC)
THIS PRODUCT MAY BE IRRITATING TO SKIN CAUSING A RASH OR DERMITITIS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
SKIN DISORDERS AND ALLERGIES.

EMERGENCY AND FIRST AID PROCEDURES
EYE CONTACT: RINSE WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
ABSORB WITH INERT MATERIAL, SWEEP OR SCOOP UP AND PUT IN DISPOSAL CONTAINER.

WASTE DISPOSAL METHOD
INCINERATE OR BURY IN LANDFILL. MUST BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. INCINERATION IS THE PREFERRED METHOD OF DISPOSAL.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
AVOID CONTACT WITH EYES, SKIN OR CLOTHING. KEEP AWAY FROM FOOD AND DRINK. KEEP DRY AND STORE IN CLOSED CONTAINERS.

OTHER PRECAUTIONS
NONE.

SECTION VIII - CONTROL MEASURES

EPIC RESINS GIVES ALL INFORMATION HEREIN CONTAINED IN GOOD FAITH. DUE TO DIFFERENT APPLICATIONS, THE END USER SHOULD MAKE THE FINAL DETERMINATION AS TO THE PROPER EQUIPMENT AND CONTROLS TO BE USED WITH THIS PRODUCT.

RESPIRATORY PROTECTION
NONE WITH ADEQUATE VENTILATION.

VENTILATION
LOCAL EXHAUST.

PROTECTIVE GLOVES
RUBBER OR PLASTIC.

EYE PROTECTION
GLASSES WITH SIDE SHIELDS, CHEMICAL SPLASH GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
EYE WASH STATION AND SAFETY SHOWER.

WORK/HYGIENIC PRACTICES
WASH AT THE END OF EACH WORKSHIFT AND BEFORE EATING, DRINKING, SMOKING OR USING THE RESTROOM. PROMPTLY REMOVE CLOTHING THAT BECOMES CONTAMINATED. EXAMINE PROTECTIVE GLOVES BEFORE USING. LAUNDER OR PROPERLY DISPOSE CONTAMINATED CLOTHING ARTICLES.

SECTION IX - OTHER INFORMATION

THIS PRODUCT TO EVALUATE ITS SUITABILITY AND COMPLIANCE WITH LOCAL REGULATIONS AS EPIC RESINS CANNOT FORESEE THE FINAL USE OF THE PRODUCT, NOR THE FINAL LOCATION OF USAGE.

MATERIAL SAFETY DATA SHEET

HMIS CODES: H F R
2 1 1

PRODUCT CODE: S7253-01[redacted]

SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: EPIC RESINS
ADDRESS : 600 Industrial Drive
Palmyra, WI 53156

EMERGENCY PHONE : (800)-424-9300 **EFFECTIVE DATE : 08/30/04**
INFORMATION PHONE : (262) 495-3400

SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE MM HG @ TEMP		WEIGHT PERCENT
* POLYMERIC DIPHENYLMETHANE DIISOCYANATE	9016-87-9	<0.00001	77 F	91 - 100%
CONTAINED IN THIS POLYMERIC MDI PRODUCT IS 4,4'-DIPHENYLMETHANE DIISOCYANATE, CAS# 101-68-8, UPPER BOUND 20%. OSHA PEL: 0.02 PPM CEILING 0.02 MG/M3 CEILING ACGIH TLV: 0.005 PPM TWA 0.051 MG/M3 TWA				

* Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372.

IF THIS PRODUCT CONTAINS PARTICULATES (FILLERS), THEY ARE BLENDED INTO A LIQUID AND POSE NO HAZARD AS SUPPLIED. THEY MAY HOWEVER BE RELEASED IF FINAL PRODUCT IS MACHINED, I.E. SANDED, CUT, ETC. THESE INGREDIENTS ARE LISTED BELOW.

NONE

INFORMATION CONCERNING ITEMS LISTED AS PROPRIETARY WILL BE DISPENSED TO HEALTH AND SAFETY PROFESSIONALS AS REQUIRED BY 29CFR 1910.1200 (OSHA HAZARD COMMUNICATIONS STANDARD).

TSCA INVENTORY STATUS: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE: NOT DETERMINED. **SPECIFIC GRAVITY (H2O=1): 1.24**
VAPOR DENSITY: NOT DETERMINED. **EVAPORATION RATE: NOT DETERMINED.**
COATING V.O.C.: 0.0 lb/gl **MATERIAL V.O.C.: 0.0 lb/gl**
SOLUBILITY IN WATER: NOT DETERMINED.
APPEARANCE AND ODOR: REFER TO PRODUCT BULLETIN.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 233.89 C **METHOD USED: PMCC**
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: N/A **UPPER: N/A**

EXTINGUISHING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, FOAM, WATER SPRAY FOR LARGE FIRES.

SPECIAL FIREFIGHTING PROCEDURES
FULL EMERGENCY EQUIPMENT WITH SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING SHOULD BE WORN BY FIRE FIGHTERS. DURING A FIRE ISOCYANATE MONOMER VAPORS AND OTHER IRRITATING, HIGHLY TOXIC GASES MAY BE GENERATED BY THERMAL DECOMPOSITION.

UNUSUAL FIRE AND EXPLOSION HAZARDS
AT TEMPERATURES GREATER THAN 400F ISOCYANATES CAN POLYMERIZE AND DECOMPOSE WHICH CAN CAUSE PRESSURE BUILDUP IN CLOSED CONTAINERS. EXPLOSIVE RUPTURE IS POSSIBLE. THEREFORE, USE COLD WATER TO COOL FIRE EXPSOSED CONTAINERS.

========== SECTION V - REACTIVITY DATA ==========

STABILITY:
STABLE
CONDITIONS TO AVOID
EXCESSIVE HEAT.

INCOMPATIBILITY (MATERIALS TO AVOID)
WATER, AMINES, STRONG BASES, AND ALCOHOLS.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
CARBON DIOXIDE, CARBON MONOXIDE, OXIDES OF NITROGEN, TRACES OF HYDROGEN CYANIDE, ISOCYANATE MONOMER VAPORS.

HAZARDOUS POLYMERIZATION:
[X] MAY OCCUR [ ] WILL NOT OCCUR THROUGH CONTACT WITH MOISTURE, OTHER MATERIALS WHICH REACT WITH ISOCYANATES, OR TEMPERATURES ABOVE 400F MAY CAUSE POLYMERIZATION.

========== SECTION VI - HEALTH HAZARD DATA ==========

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
CONCENTRATIONS OF ISOCYANATE VAPORS ABOVE THE TLV CAN IRRITATE THE MUCOUS MEMBRANES IN THE RESPIRATORY TRACT CAUSING RUNNY NOSE, SORE THROAT, COUGHING, CHEST DISCOMFORT, REDUCED LUNG FUNCTION, AND PULMONARY EDEMA. REPEATED OVEREXPOSURE OR A SINGLE LARGE DOSE CAN RESULT IN ISOCYANATE SENSITIZATION. THESE SYMPTOMS CAN BE DELAYED UP TO SEVERAL HOURS AFTER EXPOSURE.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
ISOCYANATES REACT WITH SKIN PROTEIN AND MOISTURE AND CAN CAUSE IRRITATION. PROLONGED CONTACT CAN RESULT IN SKIN SENSITIZATION. VAPORS CAN CAUSE BURNING IN EYES AND IF LEFT UNTREATED, CAN CAUSE CORNEAL DAMAGE.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
SKIN ABSORPTION MAY BE HARMFUL. MAY CAUSE SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES. MAY CAUSE PAIN, ITCHING, DISCOMFORT OR DERMITITIS.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
INGESTION CAN RESULT IN IRRITATION AND CORROSIVE ACTION IN THE MOUTH, STOMACH TISSUE AND DIGESTIVE TRACT. SYMPTOMS CAN INCLUDE SORE THROAT, ABDOMINAL PAIN, NAUSEA, VOMITING AND DIARRHEA.

HEALTH HAZARDS (ACUTE AND CHRONIC)
MAY BE IRRITATING TO EYES, SKIN AND MUCOUS MEMBRANES. MAY CAUSE REDNESS, SWELLING OR DERMITITIS. PROLONGED CONTACT OR VAPOR OVEREXPOSURE MAY CAUSE ALLERGIC REACTIONS, SENSITIZATION, COUGHING OR SORE THROAT.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
ASTHMA, OTHER RESPIRATORY DISORDERS (BRONCHITIS, EMPHYSEMA, BRONCHIAL HYPER ACTIVITY), SKIN ALLERGIES, ECZEMA.

EMERGENCY AND FIRST AID PROCEDURES
FOR EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION. FOR SKIN, REMOVE CONTAMINATED CLOTHING AND WASH THOROUGHLY WITH SOAP AND WATER. FOR INHALATION, MOVE VICTIM TO FRESH AIR, ADMINISTER OXYGEN OR ARTIFICIAL RESPIRATION AS NEEDED. SEEK MEDICAL ATTENTION. FOR INGESTION, DO NOT INDUCE VOMITING. GIVE 1 TO 2 CUPS OF MILK OR WATER TO DRINK. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CONSULT PHYSICIAN.

========== SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE ==========

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
EVACUATE AND VENTILATE SPILL AREA; DIKE SPILL TO PREVENT ENTRY INTO WATER SYSTEM. WEAR FULL PROTECTIVE EQUIPMENT. ABSORB WITH INERT MATERIAL. SPILL CAN BE NEUTRALIZED WITH THE FOLLOWING SOLUTION (90% WATER,8% AMMONIA, 2% DETERGENT). ADD ABOUT 10 PARTS OF NEUTRALIZER PER PART OF ISOCYANATE. SCOOP INTO DISPOSAL CONTAINERS. DO NOT SEAL WASTE CONTAINERS AS CO2 EVOLUTION CAN CAUSE PRESSURE BUILDUP AND CONTAINER RUPTURE.

WASTE DISPOSAL METHOD
INCINERATE OR BURY IN LANDFILL IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. INCINERATION IS THE PREFERRED METHOD OF DISPOSAL.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
STORE IN TIGHTLY CLOSED CONTAINERS TO PREVENT MOISTURE CONTAMINATION. CARE SHOULD BE TAKEN TO AVOID CONTACT WITH SKIN AND EYES. DO NOT BREATHE AEROSOLS OR VAPORS. KEEP AWAY FROM FOOD AND DRINK.

OTHER PRECAUTIONS
DISPOSE OF ALL CONTAMINATED LEATHER ITEMS. LEATHER CANNOT BE DECONTAMINATED.

========== SECTION VIII - CONTROL MEASURES ==========

EPIC RESINS GIVES ALL INFORMATION HEREIN CONTAINED IN GOOD FAITH. DUE TO

DIFFERENT APPLICATIONS, THE END USER SHOULD MAKE THE FINAL DETERMINATION AS TO THE PROPER EQUIPMENT AND CONTROLS TO BE USED WITH THIS PRODUCT.

RESPIRATORY PROTECTION
SELF-CONTAINED OR AIR SUPPLIED RESPIRATOR WITH FULL FACE PIECE WHERE TLV IS EXCEEDED. CARTRIDGE RESPIRATORS ARE NOT RECOMMENDED DUE TO THE POOR WARNING PROPERTIES OF ISOCYANATES. EXPOSED PERSONS WILL NOT BE ABLE TO SMELL THE MATERIAL UNTIL THE TLV HAS BEEN EXCEEDED.

VENTILATION
LOCAL EXHAUST.

PROTECTIVE GLOVES
PERMEATION RESISTANT GLOVES (BUTYL RUBBER, NITRILE RUBBER, PVC OR POLYVINYL ALCOHOL).

EYE PROTECTION
GLASSES WITH SIDE SHIELDS, CHEMICAL SPLASH GOGGLES AND/OR FACE SHIELD.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT
EYE WASH STATION AND SAFETY SHOWER. IMPERVIOUS CLOTHING.

WORK/HYGIENIC PRACTICES
WASH AT THE END OF EACH WORKSHIFT AND BEFORE EATING, DRINKING, SMOKING OR USING THE RESTROOM. PROMPTLY REMOVE CLOTHING THAT BECOMES CONTAMINATED. EXAMINE PROTECTIVE GLOVES BEFORE USING. LAUNDER OR PROPERLY DISPOSE CONTAMINATED CLOTHING ARTICLES.

SECTION IX - OTHER INFORMATION